

84

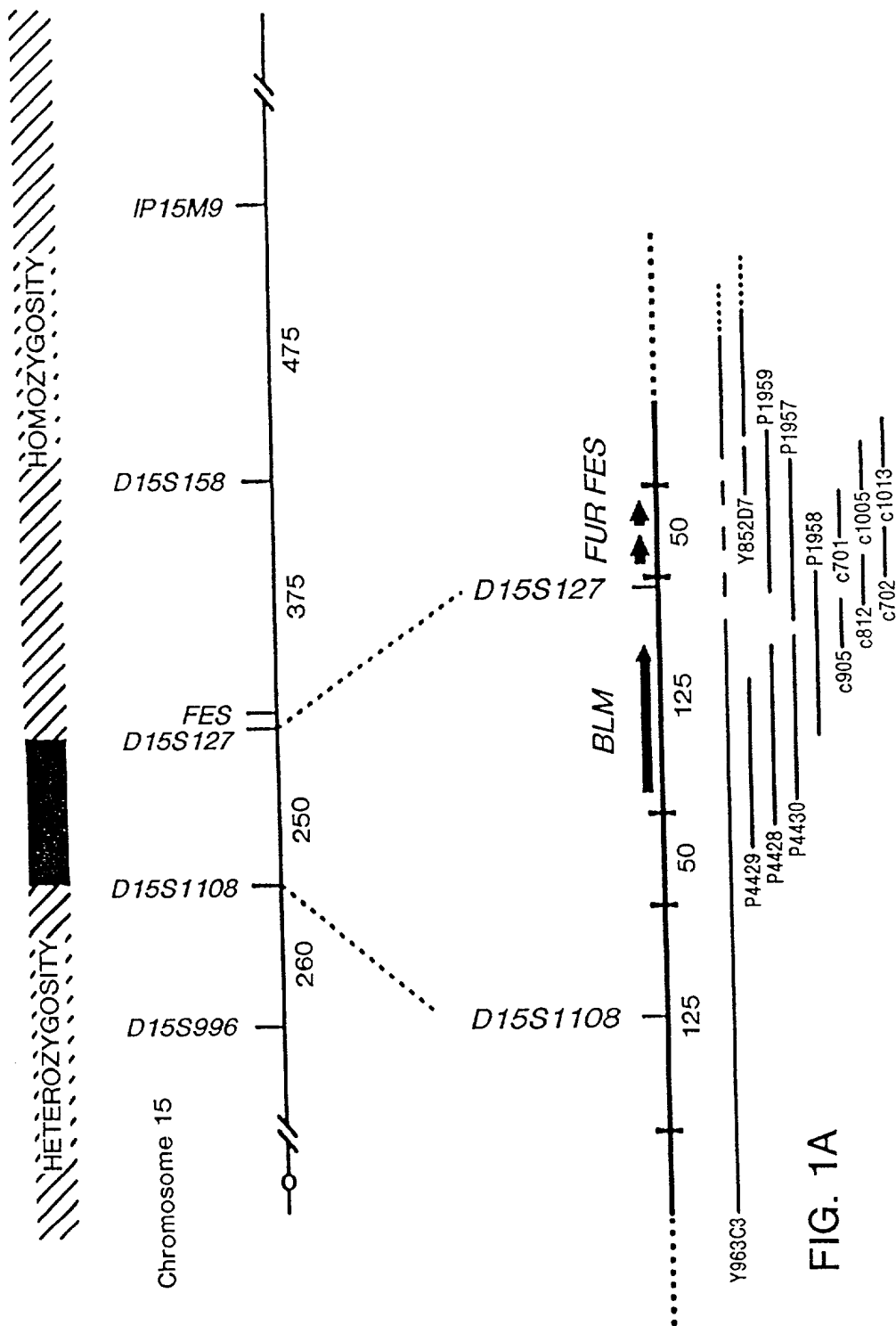


FIG. 1A

	<u>11(laTh)</u>	<u>59(FrFit)</u>	<u>87(AIFra)</u>	<u>NR8(KeSol)</u>
D15S1108	PF P ^h P ^l P ^l RM	PF P ^h P ^l RM	PF P ^h P ^l RM	

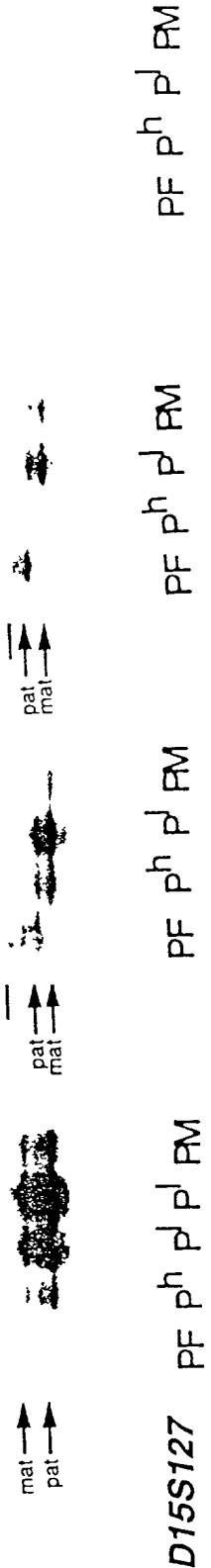
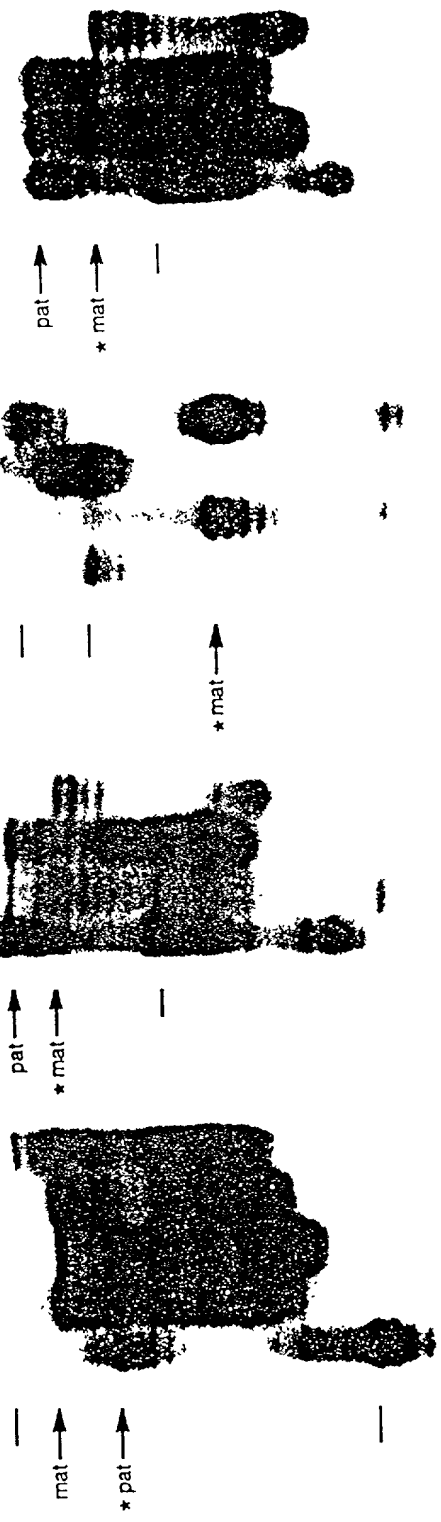


FIG. 1B



gcgcgggccgttggttgcggcgggggaagtttggatccctggttccgtccgctaggagtcgtgcgaggattATGGCT M A
GCTGTTCCTCAAAATAAATCTACAGGAGCAACTAGAACGTCACCTCAGCCAGAACACTTAATAATAAATTAAAGTCTTTCAA
3 A V P Q N N L Q E Q L E R H S A R T L N N K L S L S K
ACCAAAAATTTTCAGGTTTCACTTTTAAAAAGAAAAACATCTTCAGATAACAATGTATCTGTAACTAATGTGCAGTAGCAA
240
30 P K F S G F T F K K K T S S D N N V S V T N V S V A
AAACACCTGTATTAGAAATAAAGATGTTAATGTACCGAAGACTTTTCCTTCAGTGAACTCTTACCCAACACACCACAAAT
320
56 K T P V L R N K D V N V T E D F S F S E P L P N T T N
CAGCAAGGGTCAAGGACTTCTTTTAAAAATGCTCCAGCAGGACAGGAAACACAGAGAGGTGGATCAAAAATCATTTATGCC
400
83 Q Q R V K D F F K N A P A G Q E T Q R G G S K S L L P
AGATTTCTTCAGACTCCGAAGGAGTTGTATGCACCTACCCAAAACACACCACTGTAAAGAAATCCCCGGGATACTGCTC
480
110 D F L Q T P K E V V C T T Q N T P T V K K S R D T A
TCAAGAAATTAGAATTAGTTCTTCACCAGATTCTTTAAGTACCATCAATGATTGGGATGATATGGATGACTTTTGATACT
560
135 L K K L E F S S S P D S L S T I N D W D D M D D F D T
TCTGAGACTTCAAAATCATTTGTTACACCACCCCAAGTCACTTTGTAAGATAAGCACTGCTCAGAAATCAAAAAGGG
640
163 S E T S K S F V T P P Q S H F V R V S T A Q K S K K G
TAAGAGAACTTTTTTAAAGCACAGCTTTTATACAACAACACAGTAAAGACTGATTGCGCTCCACCTCTCTGAAAAGCG
720
190 K R N F F K A Q L Y T T N T V K T D L P P P S S E S
AGCAATATAGATTTGACTGAGGAACAGAAGGATGACTCAGAAATGTTAAGCAGCGATGTGATTTCATCGATGATGCGCCC
800
216 E Q I D L T E E Q K D D S E W L S S D V I C I D D G P
ATTGCTGAAGTGCATATAAATGAAGATGCTCAGGAAAGTGACTCTCTGAAAACACTCATTTGGAGATGAAAGAGATAATAG
880
243 I A E V H I N E D A Q E S D S L K T H L E D E R D N S
CGAAAAGTGAAGAAITTTGGAAGAGCTGAATTACATTCAACTGAGAAAAGTTCCATGTATTGAATTGATGATGATGATT
960
270 E K K K N L E E A E L H S T E K V P C I E F D D D
ATGATACGGAATTTGTTCCACCTTCTCCAGAAGAAATTTATTTCTGCTTCTTCTCTTCTTCAAAATGCCCTTAGTACGTTA
1040
296 Y D T D F V P P S P E E I I S A S S S S K C L S T L
AAGGACCTTGACACATCTGACAGAAAAGAGGATGTCTTTAGCACATCAAAAGATCTTTTGTCAAACCTGAGAAAATGAG
1120

FIG. 2A

323 K D L D T S D R K E D V L S T S K D L L S K P E K M S
 TATGAGGAGCTGAATCCAGAAACCAGCACAGACTGTGACGCTAGACAGATAAGTTTACAGCAGCAGCTTATTCATGTGA 1200
 350 M Q E L N P E T S T D C D A R Q I S L Q Q Q L I H V
 TGGAGCACATCTGTAAATTAATTGATCTATTCCTCATGATAAAGTGAACCTTTTGGATTGTGGAAACGAACGCTTCAG 1280
 376 M E H I C K L I D T I P D D K L K L L D C G N E L L Q
 CAGCGGAACATAAGAAAGGAACTTCTAAGCGAAGTAGATTTTAATAAAAGTATGCCAGTCTCTTGGCTCATTTGTGGAG 1360
 403 Q R N I R R K L L T E V D F N K S D A S L L G S L W R
 ATACAGGCCTGATTCACCTTGATGGCCCTATGAGGGGTGATTCCTGCCCTACAGGGAATTCCTATGAAGGAGTTAAATTTT 1440
 430 Y R P D S L D G P M E G D S C P T G N S M K E L N F
 CACACCTTCCCTCAAATTCCTCTCTCGGGAGCTGTTTACTGACTACCCCTAGGAAAGACAGGATTCCTCTGCCACC 1520
 456 S H L P S N S V S P G D C L L T T T L G K T G F S A T
 AGGAAGAATCTTTTGAAGGCTTTATTCATACCCATTACAGAAGTCTTGTAGTAGCAACTGGGCTGAACACC 1600
 483 R K N L F E R P L F N T H L Q K S F V S S N W A E T P
 AAGACTAGGAAAAAATAAGCTCTTATTTCCAGGAAATGTTCTCACAAGCAGCTGTGTGAAGATCAGAATAAAC 1680
 510 R L G K K N E S S Y F P G N V L T S T A V K D Q N K
 ATACTGCTTCAATAANTGACTTAGAAGAGAAACCCAACTTCCTATGATATTGATAATTTTGACATAGATGACTTTGAT 1760
 536 H T A S I N D L E R E T Q P S Y D I D N F D I D D F D
 GATGATGACTGGGAAGACATAATGCATAATTTAGCAGCCAGCAATCTTCCACAGCTGCCCTATCAACCCATCAAGGA 1840
 563 D D D D W E D I M H N L A A S K S S T A A Y Q P I K E
 AGTTCGGCCAAATTAATCAGTATCAGAAAGACTTTCCTCAGCCAGCAGACTGTCTTCCAGTGTCTACTGCTCAAA 1920
 590 Ć Ĥ Ĥ I Ĥ Ĥ V S E Ĥ Ĥ S S A K T D C L P V S Š T Ĥ Q
 ATATAAACTTCTCAGAGTCAATTCAGAAATATATACTGACAAGTCAGCACAATAATTTAGCATCCAGAAATCTGAAACATGAG 2000
 616 Ń I N Ĥ S Ĥ S I Q N Y T D K S A Ŗ N Ĥ A S Ŗ N L K H E
 CGTTTCCAAAGTCTTAGTTTCTCTCATACAAAGGAAATGATGAAGATTTTTCATATAAAAATTTGGCCTGCATAATTTTGA 2080
 643 R F Ŗ Š Ĥ S F Ĥ Ĥ H Ĥ K E M K I Ĥ Ĥ K K F G L H N F R
 AACTAATCCTAGAGGGGATCAATGCTGCACCTCTTGGTGAAGACTGTTTATCTCTGATGCCGACTGGAGGTGGTAAGA 2160
 670 T N Q L E A I N A A L L G E D C F I L M P T G G G K
 GTTGTGTTACCAGCTCCCTGCTGTGTTCTCTCGGGGTCACTGTGTGCTATTTCTCCCTTGAGATCACTTATCGTAGAT 2240

FIG. 2B

696 S L C Y Q L P A C V S P G V T V V I S P L R S L I V D
 CAAGTCCAAAAGCTGACTTCCTTGGATATTCAGCTACATATCTGACAGGTGATAAGACTGACTCAGAGCTACAAATAT 2320
 723 Q V Q K L T S L D I P A T Y L T G D K T D S E A T N I
 TTACCTCCAGTTATCAAAAAAGACCCCAATCATATAAACTTCTATATGTCACCTCCAGAAAAGATCTGTGCAAGTAAACAGAC 2400
 750 Y L Q L S K K D P I I K L L Y V T P E K I C A S N R
 TCATTCTACTCTGGAGAACTCTATGAGAGGAGCTCTTGGCAGCTTTGTTATTGATGAAGCACATTGTGTCAGTCAG 2480
 776 L I S T L E N L Y E R K L L A R F V I D E A H C V S Q
 TGGGACATGATTTTGGTCAAGATTACAAAAGAAATGAATATGCTTGGCCAGAAAGTTTCTCTTCTGTTCCGGTGATGGCTCT 2560
 803 W G H D F R Q D Y K R M N M L R Q K F P S V P V M A L
 TACGGCCACAGCTAATCCAGGGTACAGAGGACATCTGACTCAGCTGAAGATTCTCAGACCTCAGGTGTTAGCAATGA 2640
 830 T A T A N P R V Q K K D I L T Q L K I L R P Q V F S M
 GCTTTAACAGACATAATCTGAAATACTATGTAATACCGAAAAAGCCCTAAAGAGTGGCATTTGATTGCCCTAGAAATGGATC 2720
 856 S F N R H N L K Y Y V L P K K P K K V A F D C L E W I
 AGAAAGCACCAACCATATGATTCAGGGATAATTTACTGCTCTCCAGCGGAGAAATGTGACACCATGGCTGACACGTTACA 2800
 883 R K H H P Y D S G I I Y C L S R R E C D T M A D T L Q
 GAGAGATGGGCTCGCTGCTTGTCTTACCATGCTGGCCTCAGTGATTCTGCCAGAGATGAAGTGCAGCAGAAGTGGATTA 2880
 910 R D G L A A L A Y H A G L S D S A R D E V Q Q K W I
 ATCAGGATGGCTGTCAGGTATCTGTGCTACAAATTGCAATTTGGAATGGGATTTGACAAACCGGACGCTGCGATTGTGATT 2960
 936 N Q D G C Q V I C A T I A F G M G I D K P D V R F V I
 CATGCATCTCTCCCTAAATCTGTGGAGGGTTACTACCAAGAATCTGGCAGAGCTTGGGAAGAGATGGGGAATATCTCACTG 3040
 963 H A S L P K S V E G Y Y Q E S G R A G R D G E I S H C
 CCTGCTTTTCTATACCTATCATGATGTGACCAGACTGAAAAGACTTATAATGATGGAAGATGGAAGATGGAAGATGGAAG 3120
 990 L L F Y T Y H D V T R L K R L I M E K D G N H H T
 GAGAAACTCACTTCAATAATTTGTATAGCATGGTACATTTACTGTGAAAAATATAACGGAATGCAGGAGAAATACAGCTTTTG 3200
 1016 R E T H F N N L Y S M V H Y C E N I T E C R R I Q L L
 GCCTACTTTGGTGAAAATGGATTTAATCTCTGATTTTCTAAGAAACACCCAGATGTTTCTTGTGATAATTGCTGTAAAC 3280
 1043 A Y F G E N G F N P D F C K K H P D V S C D N C C K T

FIG. 2C

AAAGGATTATAAACAAGAGATGTGACTGACGATGTGAAAGATTTCTAAGATTTGTTCAGAACATAGTTTCATCACAAAG 3360
 1070 K D Y K T R D V T D D V K S I V R F V Q E H S S S Q
 GAATGAGAAATATAAAACATGTAGTCCCTTCTGGAAGATTTACTATGAATATGCTGGTCGACATTTTCTTGGGAGTAAG 3440
 1096 G M R N I K H V G P S G R F T M N M L V D I F L G S K
 AGTGCAAAATCCAGTCAGGTATATTGGAAAAGGATCTGCTTATTCACGACACAAATGCCGAAAGACTTTTAAAAAAGCT 3520
 1123 S A K I Q S G I F G K G S A Y S R H N A E R L F K K L
 GATACTTGACAAGATTTTGGATGAAGACTTATATCAATGCCAATGACCAGGCGATCGCTTATGTGATGCTCGGAATA 3600
 1150 I L D K I L D E D L Y I N A N D Q A I A Y V M L G N
 AAGCCCAAACTGTACTAAATGGCAATTTAAAGGTAGACTTTATGGAACACAGAAAATTCACGACGAGTGTGAAAAACAAAA 3680
 1176 K A Q T V L N G N L K V D F M E T E N S S S V K K Q K
 GCGTAGTAGCAAAAGTGTCTCAGAGGGAAGAGATGGTTAAAAAATGTCTTGAGAACTTACAGAACTTACAGAACTGTCAAATCTCT 3760
 1203 A L V A K V S Q R E E M V K K C L G E L T E V C K S L
 GGGGAAAGTTTTTGGTGTCCATTACTTCAATATTTTAAATACCGTCACTCTCAAGAAAGCTTGCAGAACTTTTATCTTCTG 3840
 1230 G K V F G V H Y F N I F N T V T L K K L A E S L S S
 ATCTGAGGTTTTGCTTCAAATTTGATGGTGTACTGAAGACAACTGGAAAAATATGGTCCGGAAGTATTCAGTATTA 3920
 1256 D P E V L L Q I D G V T E D K L E K Y G A E V I S V L
 CAGAAATACTCTGAATGGACATCGCCAGCTGAAGACAGTTCCCCAGGATAAGCCTGTCCAGCAGCAGAGGCCCGGAAAG 4000
 1283 Q K Y S E W T S P A E D S S P G I S L S S S R G P G R
 AAGTGCCGCTGAGGAGCTTGACGAGGAATACCCGTATCTTCCACTACTTTTGCAGTAATAAACCCAGAAATGAAAGGAAGA 4080
 1310 S A A E E L D E E I P V S S H Y F A S K T R N E R K
 GGAAAAAGATGCCAGCCTCCCAAGGTCTAAGAGGAGAAAAAAGTCTTCCAGTGGTTCCAAGGCAAGGGGGGTCTGCC 4160
 1336 R K K M P A S Q R S K R R K T A S S G S K A K G G S A
 ACATGTAGAAAGATATCTTCCAAAACGAAATCCTCCAGCATCATTTGGATCCAGTTCAGCCTCACATACTTCTCAAGCGAC 4240
 1363 T C R K I S S K T K S S I I G S S A S H T S Q A T
 ATCAGGAGCCAATAGCAAAATTGGGGATTATGGCTCCACCGAAGCCTATAAATAGACCGTTTCTTAAGCCTTCATATGCAT 4320
 1390 S G A N S K L G I M A P P K P I N R P F L K P S Y A
 TCTCATAAcaaccgaatctcaatgtacatagaccctcttcttgtgtgtcagcatctgaccatctgtgactataaagctg 4400
 1416 F S
 ttattcttgttataccacaaaaaaaaaaaaaaaaa 4437

FIG. 2D

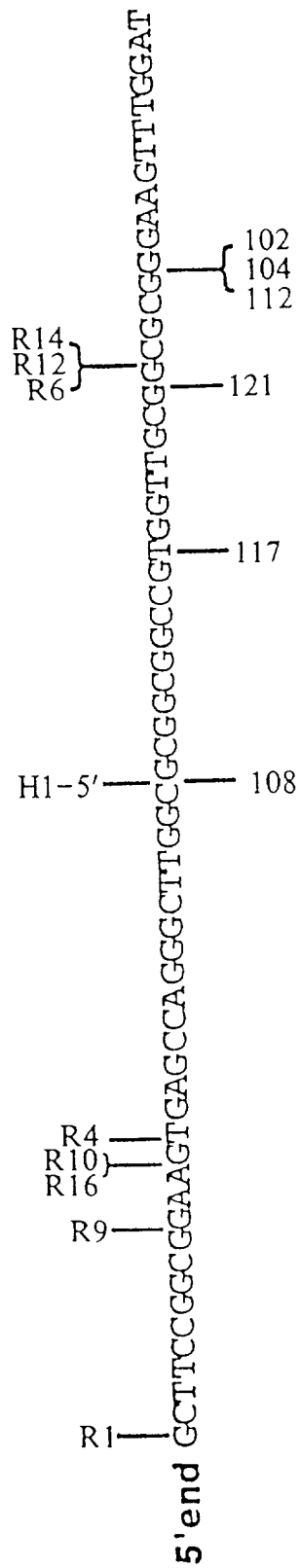


FIG. 3

*
 649 FPHTKEMMKIFHKFGLHNFRNTNQLEAINAALLGEDCFILMPTGGGKSLCYQLPACV-----SPGVTVVISPLRSLIVDQV BLM
 74 FPWSGKVKDILQNVFKLEKFRPLQLEETINVTMAGKEVFLVMPTGGGKSLCYQLPALC-----SDGFTLVICPLISLMEDQL REQ
 659 YPWSDEVLYRLHEVFKLPGRPNQLEAVNATLQGDVFLVMPTGGGKSLCYQLPAVVKSGKTHGTTIVISPLISLMQDQV SGS1
 16 -----VLQETFGYQQFRPGQEEI IDTVLSGRDCLVVMPTGGGKSLCYQIPALL-----LNGLTVVVVSPLISLMKDQV recQ

 I
 725 QKLTSLDIPATYLTGDKTDSEATNIYLQSKKDPI IKLLYVTPEKICASNRLISTLENLYERKLLARFVIDEAHCVSQWG BLM
 150 MVLKQLGISATMLNASSKEHVKWHDEMVNKNSELKLIYVTPPEKIAKSMFMSRLEKAYEARFRFTRIAVDEVHCCSQW REQ
 739 EHLLNKNIKASMFSSRGTAEQRRQTFNLFIN--GLLDLVYISPEMI SASEQCKRAISRLYADGKLARIVVDEAHCVSNWG SGS1
 83 DQLQANGVAAACLNSTQTREQQLEVMT--GCRGTQIRLLYIAPERL-----MLDNFLEHL-AHWNPVLLAVDEAHCISQWG recQ

 I I
 805 HDFRQDYKRMNMLRQKFPSPVPMALTATANPRVQKDILTQLKILRPQVFSMFSNRHNLKYVLPKKPKKVA---FDCLEW BLM
 230 HDFRPDYKALGILKRQFPNASLIGLTATATNHLVLTDAQILCIEKCFTFASFNPNL--YIEVRQKPSNTEDFIEDIVKL REQ
 817 HDFRPDYKELKFFKREYDIPMIALTATASEQVRMDI IHNLELKEPVFLKQSFNRTNL--YIEVVKTKTNT---IFEICDA SGS1
 157 HDFRPEYAALGQLRQRFPTLPFMALTATADDDTTTRQDIVRLGLNDPLIQISSDRPNIRY-MLMEKFKPLDQLM-----RY recQ

 I I I
 882 IRKHHPYDSGIIYCLSRRECDTMADTLQRDGLAALAYHAGLSDSARDEVQQKWQINQDGCQVICATIAFGMGIDKPDVRFV BLM
 309 INGRYKQSGIIYCFQSKDSEQVTVSLQNLGIHAGAYHANLEPEDKTTVHRKWSANE-IQVVVATVAFGMGIDKPDVRFV REQ
 893 VKSRFNQGTGIIYCHSKKSCQTSQMQMRNGIKCAYYHAGMEPDERLSVQKAWQADE-IQVICATVAFGMGIDKPDVRFV SGS1
 233 VQEQ--RGKSGIIYCNRAKVEDTAAALQSKGISAAAYHAGLENNVRADVQEKFORDD-LQIVVATVAFGMGINKPNVRFV recQ

 I I I
 962 IHASLPKSVEGYQESGRAGRDGEISHCLLFYTYHDVTRLKRLIMMEKDGNNHHTRETHFNNLYSMVHYCENITECRRIOQL BLM
 388 IHHSMSKSMENYQESGRAGRDGDMKADCILYGFQDIFRISSMVMENVGQQ-----KLYEMVSYCQNISKSRRVLM REQ
 972 YHFTVPRTLEGYYQETGRAGRDGNYSYCITYFSFRDIRTMQMTMIQDKNLDRENKEKHLNKLQQVMAYCDNVTDCRRKLV SGS1
 311 VHFDIPRNIESYYQETGRAGRDGLPAEAMLFYDPPADMAWLRLRCLEEKPGQQLQDIERH--KLNAMGAFAEAQT-CRRLVL recQ

FIG. 4

4.5 kb →

HG2162
HG2635
HeLa



FIG. 5A

HG1943
HG2162
HG2703
HG1584
HG1987
HG1972
HG2231
HG1626
HG2820



FIG. 5B



FIG. 6A



FIG. 6B



FIG. 6C

2025001-24163260

09743-4054
6449260

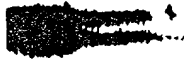


FIG. 6D



FIG. 6E